

# European tourism, transport and environmental impacts

OECD Workshop on

LEISURE TRAVEL, TOURISM TRAVEL, AND THE  
ENVIRONMENT

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- Some trends and mechanisms
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# The MuSTT project

- The MuSTT project (Multi-stakeholder European Targeted Action for Sustainable Tourism & Transport) has been initiated by DG Enterprise.
- Consortium: PriceWaterhouseCoopers, NEA, DTV Consultancy, IWW and NHTV/CSTT

## Project objective:

- uncoupling growth of tourism and of transport
- encourage innovative practices to enhance sustainable development

# Methods (1): definitions

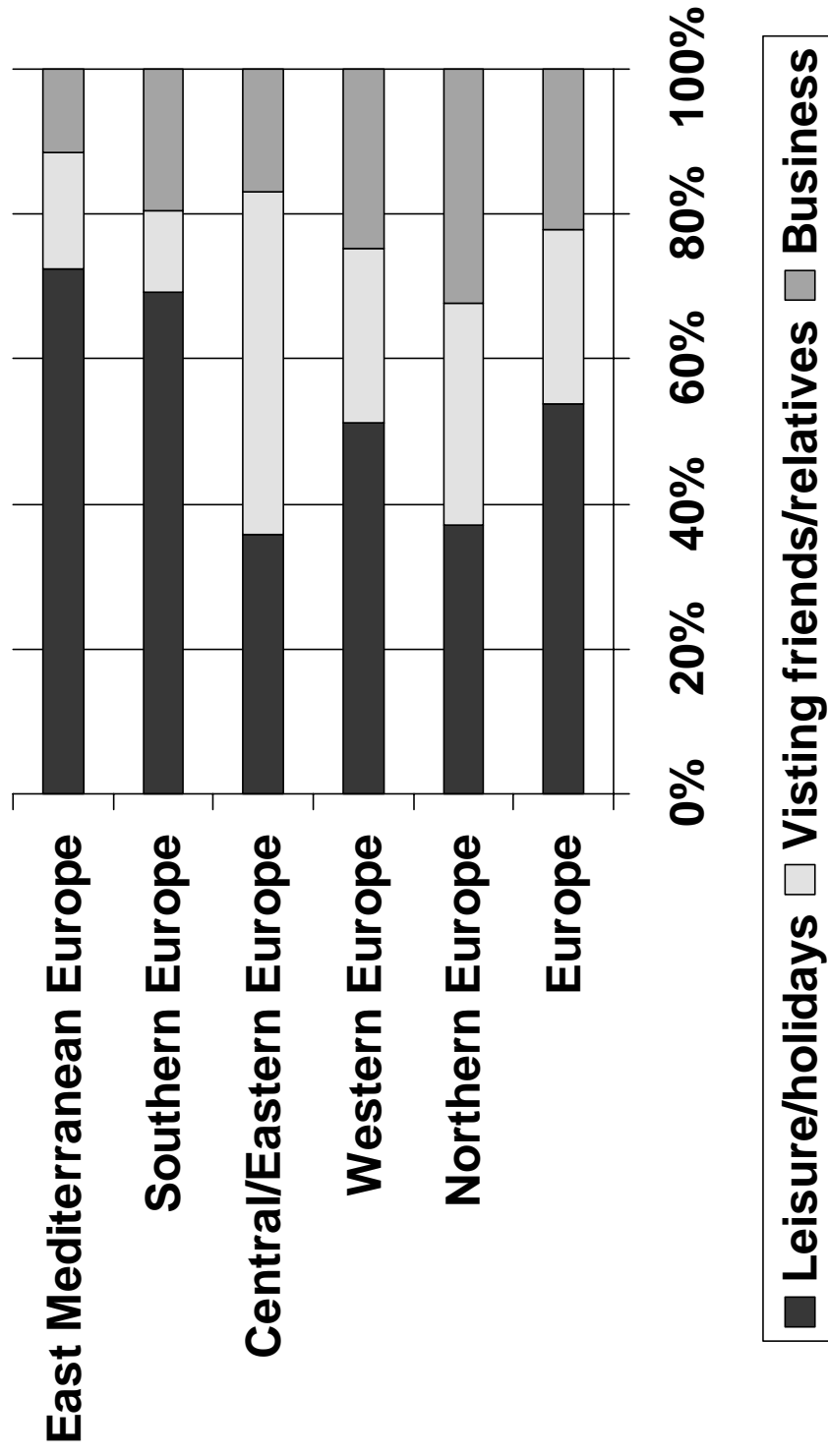
- **Tourism:** all trips more than one night, but less than one year for leisure and holiday, business and visits to friends and relatives.
- **EU15:** member states before June of 2004.
- **EU10:** new member states since June 2004.
- **EU25:** EU15 plus EU10.
- **EU-plus:** EU25 plus Bulgaria, Romania, Norway, Switzerland.
- **ICA:** intercontinental tourism.
- **Domestic tourism:** tourists staying within their own country.
- **OD-Transport:** between normal residence and destination.
- **Local transport:** transport at destinations.

# Methods (2): The MuSTT model

MuSTT model created from WTO data and TEN-STAC:

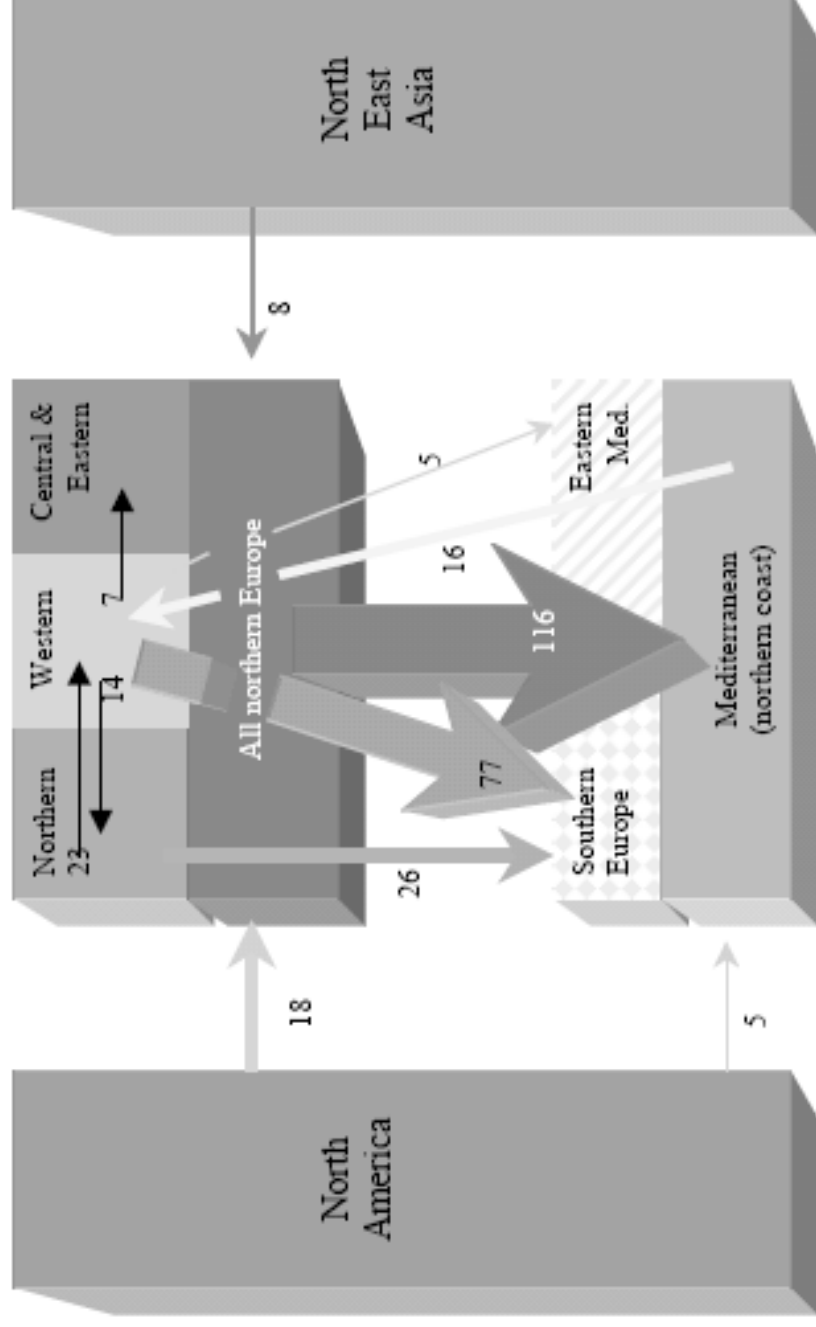
- Number of international tourists from WTO;
- Modakl split from TEN-STAC;
- Empty cells WTO data filled with TEN-STAC data;
- Canary Islands added from share given by TEN-STAC;
- Malta and Cyprus from WTO data assuming 100% air transport;
- Average OD-travel distances from TEN-STAC;
- Coach and ferries estimated from Eurostat data and taken from the ROAD transport mode of TEN-STAC.

# EU Tourism (1): purpose of visit per destination



Source: WTO, 2003; figures for 2001

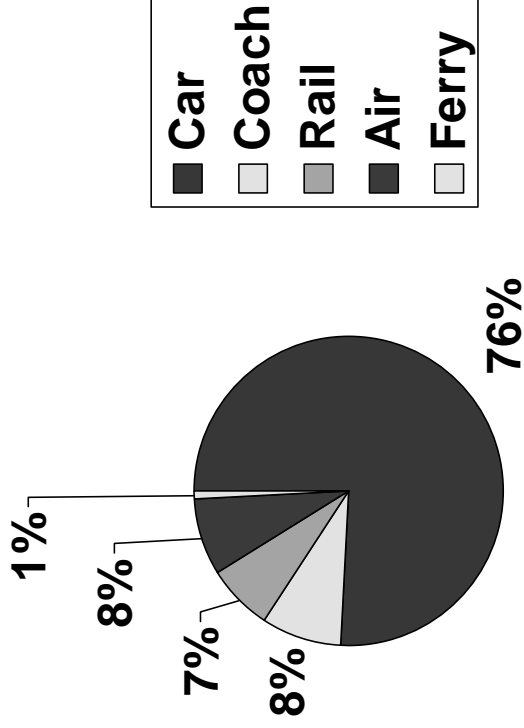
# EU tourism (2): main flows



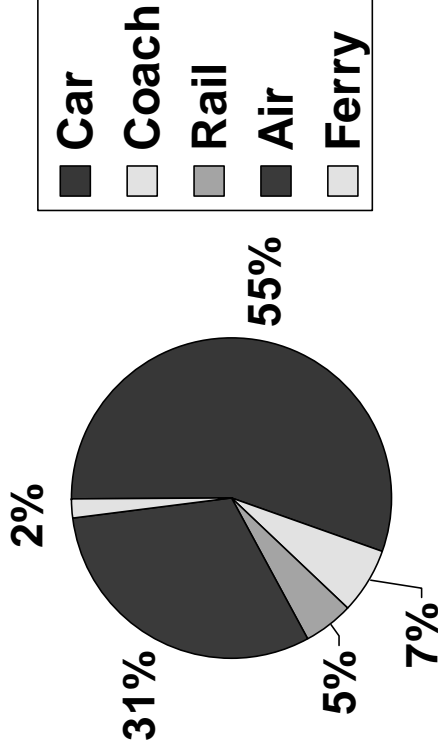
Source: WTO, 2003; figures for 2001

# Tourism transport (1): modal split

**Modal split (pkm) all  
intra-EU15 transport**

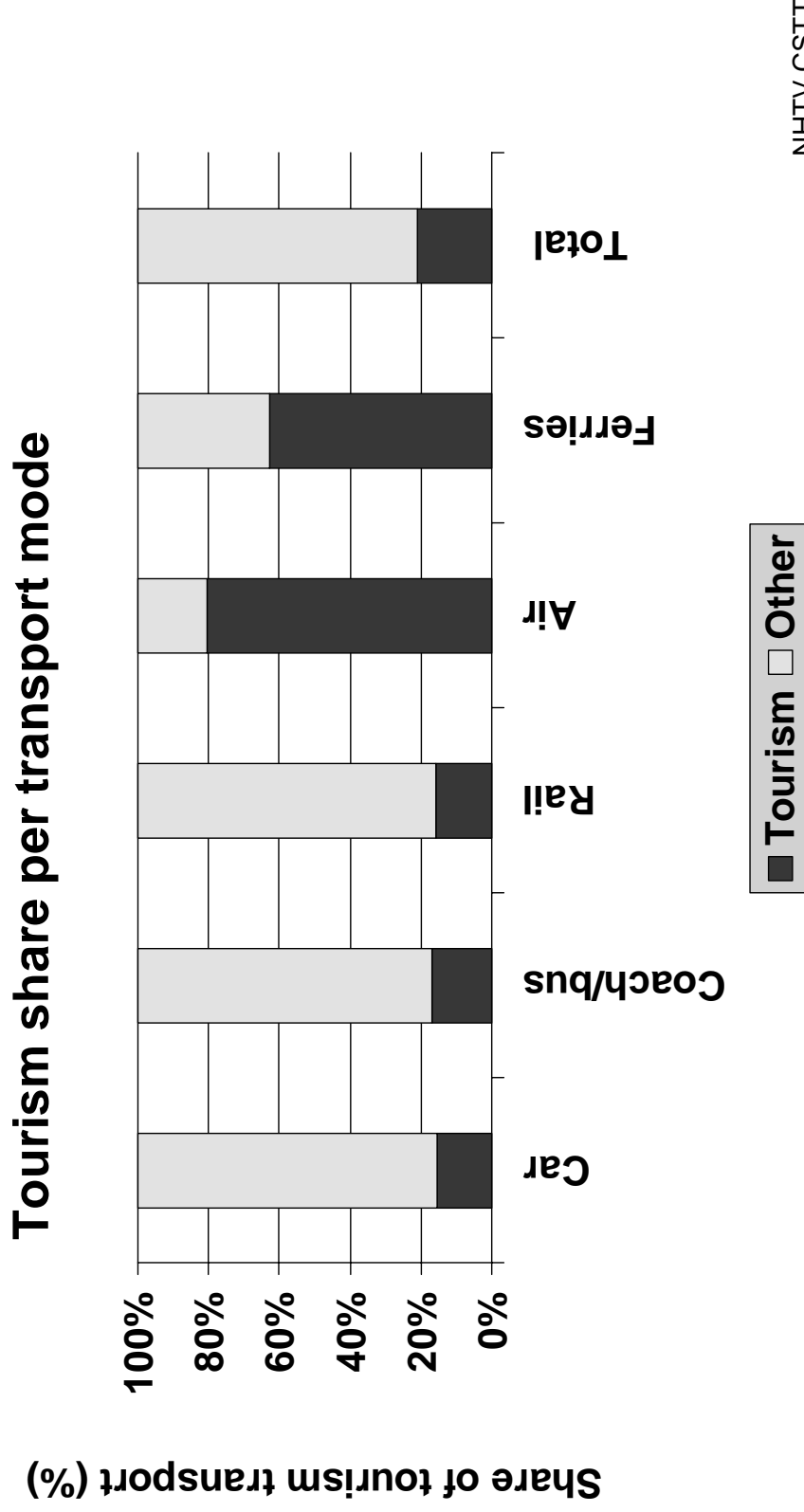


**Modal split (pkm)  
tourism intra-EU15  
transport**



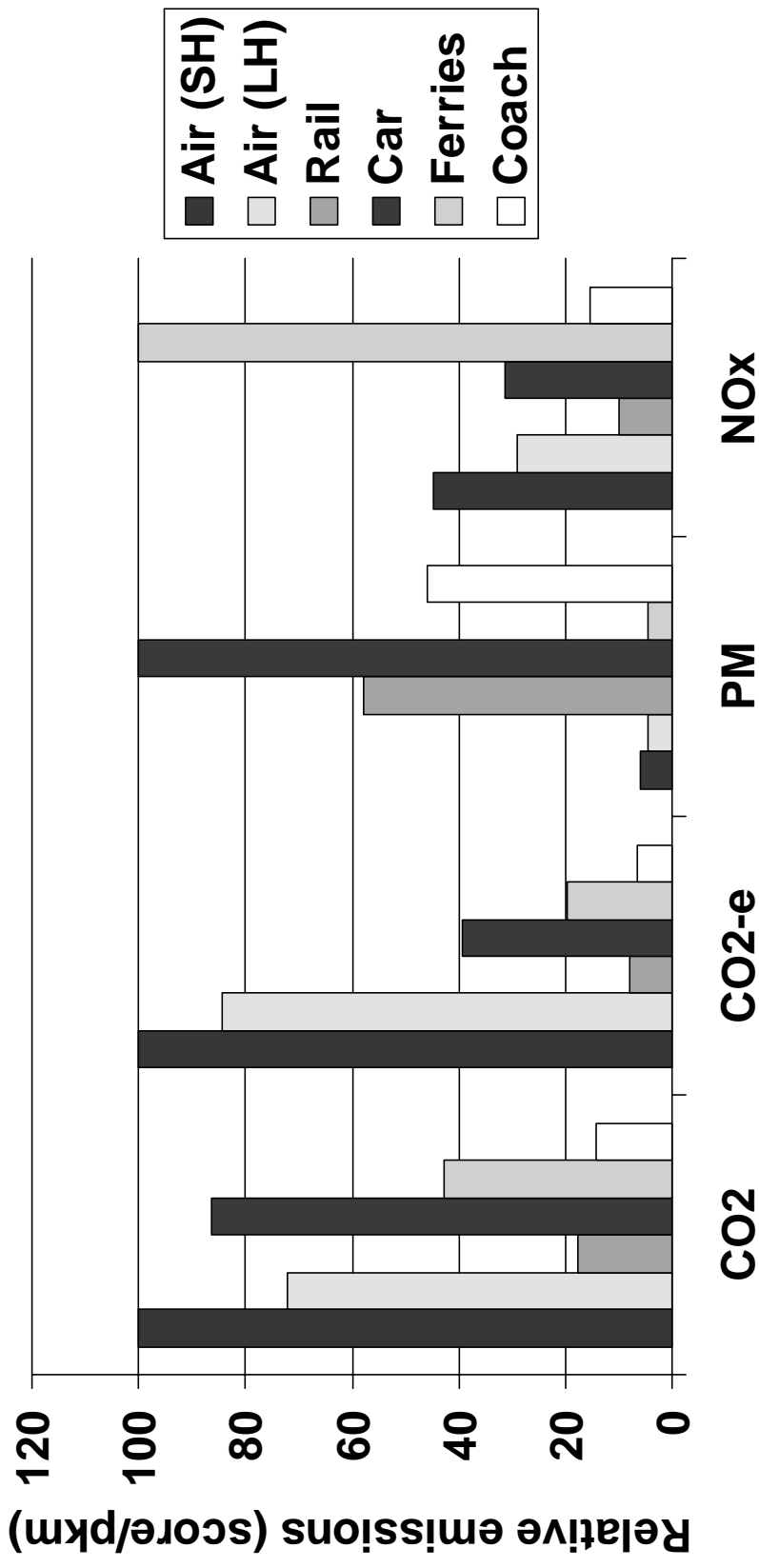
Source: Eurostat (left) and MuSTT model (right); figures for 2001

# Tourism Transport (2): tourism shares per mode



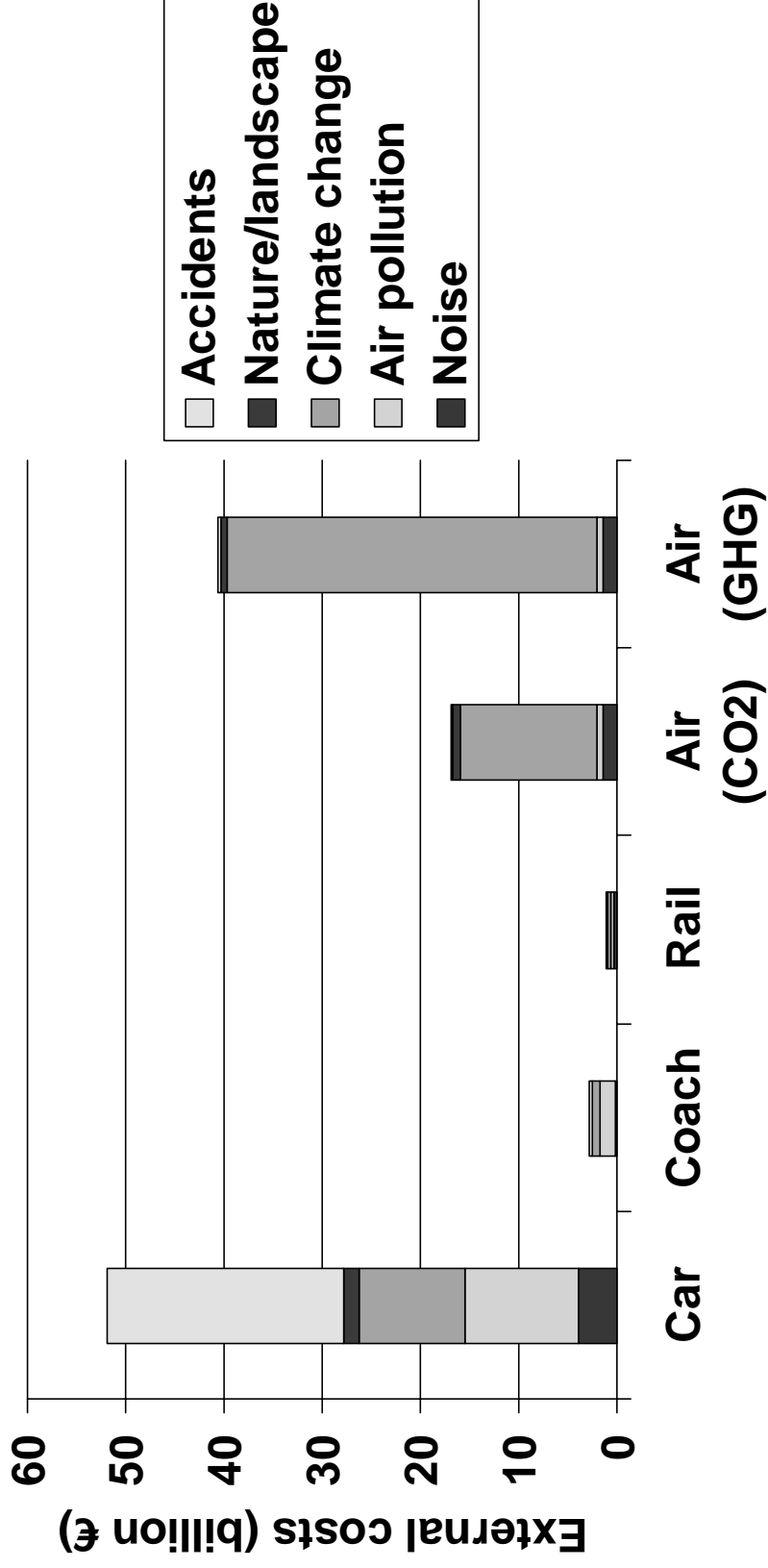
Source: WTO, 2003; figures for 2001

# Environment (1): emissions factors



Source: MuSTT model; figures for 2001

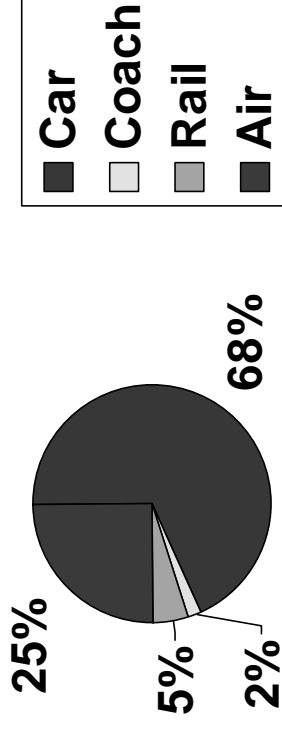
# Environment (2): external cost intra EU-plus tourism OD-transport



Source: IWW/INFRAS plus MuSTT model; figures for 2001

# Environment (3): noise

## Noise total external cost for tourism transport



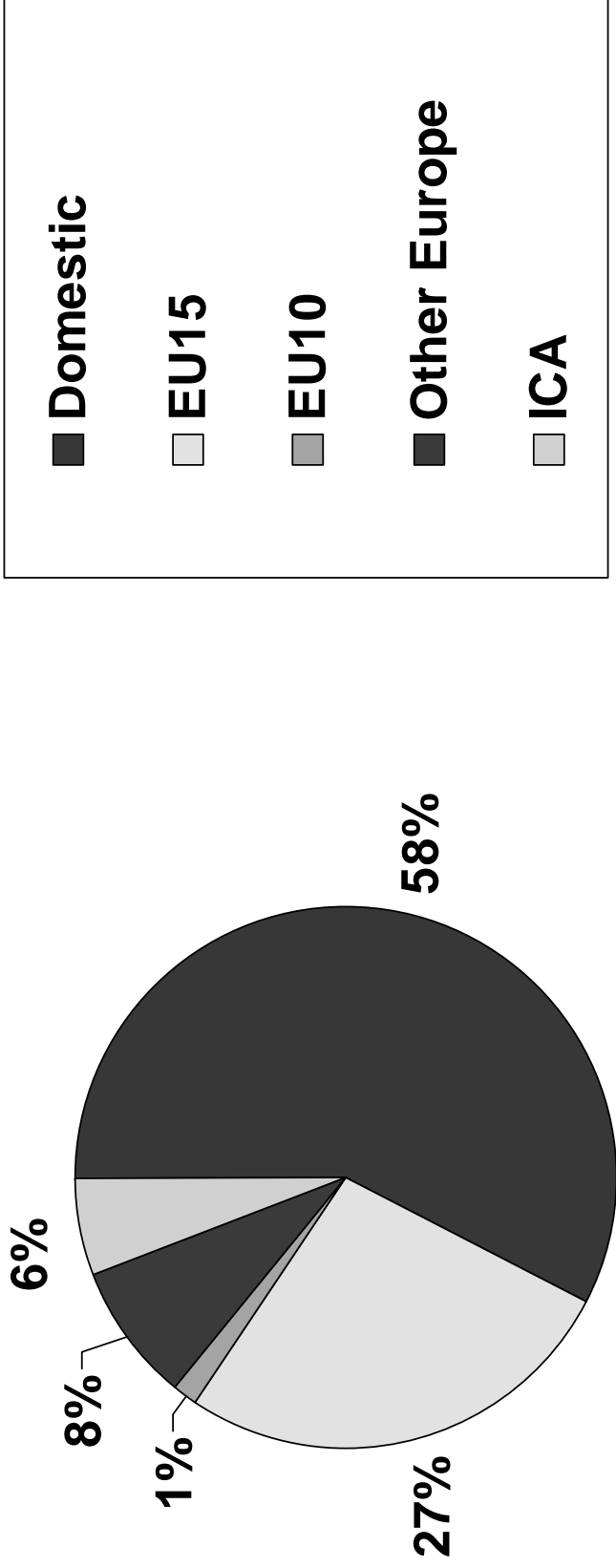
However:

- Long distance tourism rail/road transport relatively more through countryside: less people → less nuisance.
- Rail/road noise dominated by other purposes and freight.
- Noise is logarithmic: halving volume is just perceptible.

From trips to impact: per market

# EU Tourism trips

## EU25 citizens departures (number of trips)

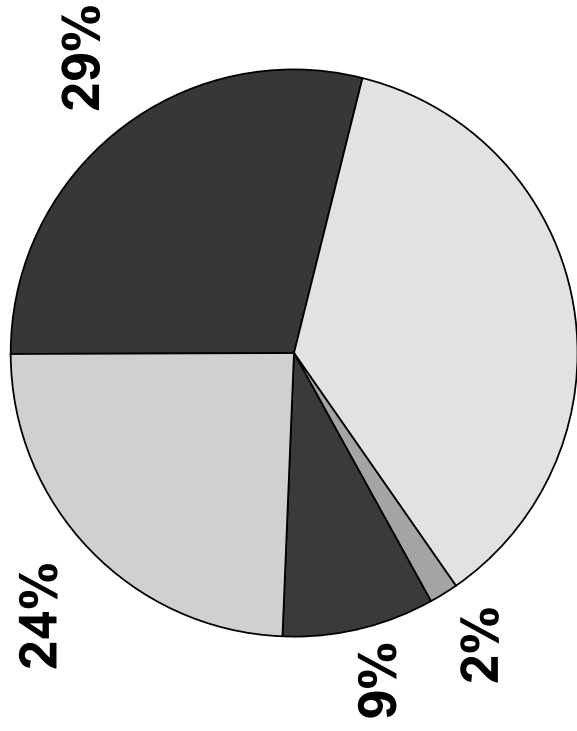


*Total: 932 million*

Source: MuSTT model; figures for 2001

# EU Tourism transport

## EU25 citizens departures (number of pkm)

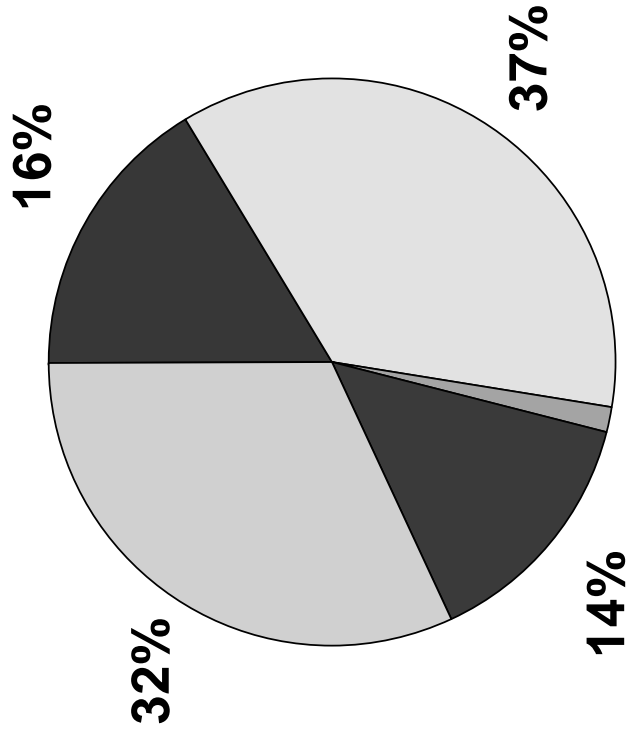


*Total: 1739 billion pkm*

Source: MuSTT model; figures for 2001

# EU Tourism CO2-e emissions

## EU25 citizens departures (CO2-e emissions)

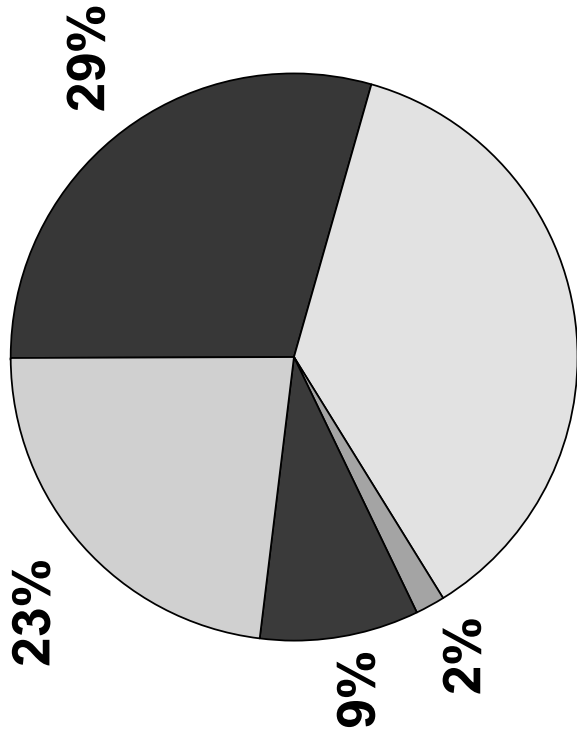


*Total: 398 million ton*

Source: MuSTT model; figures for 2001

# EU Tourism transport NOx emissions

## EU25 citizens departures (NOx emissions)

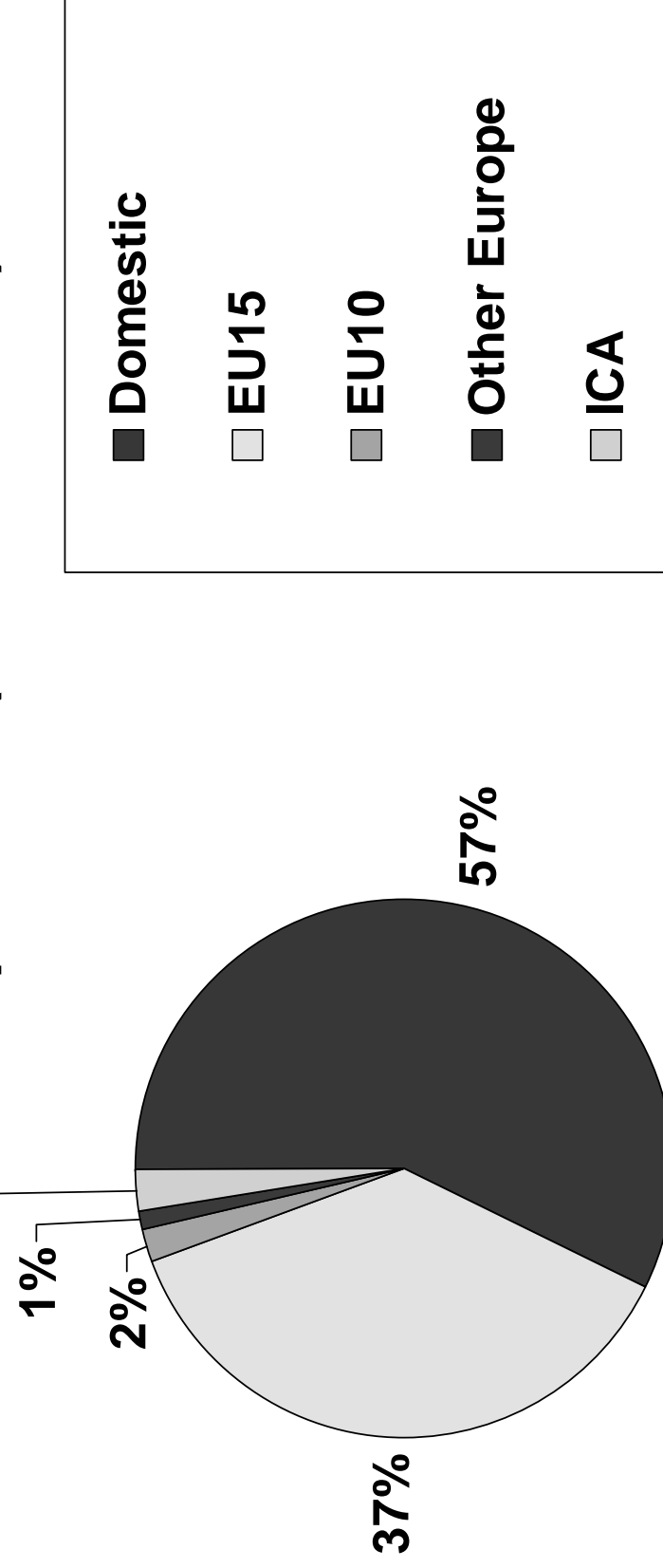


***Total: 858 million kg***

Source: MuSTT model; figures for 2001

# EU Tourism transport PM emissions

## EU25 citizens departures (PM emissions)



*Total: 16.7 million kg*

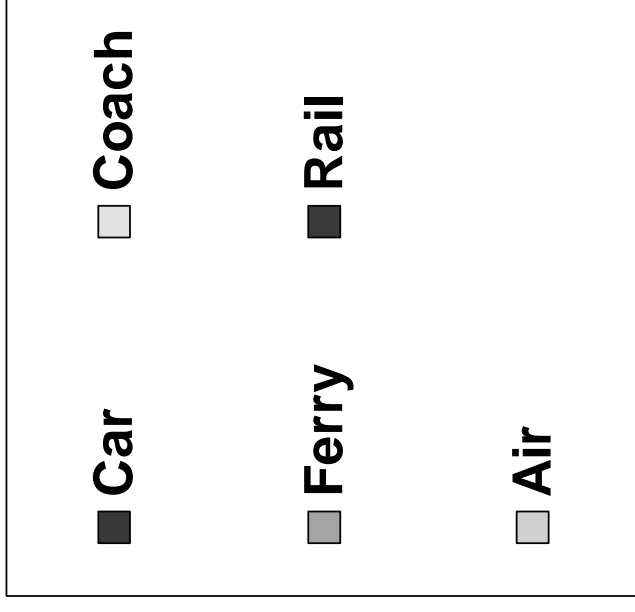
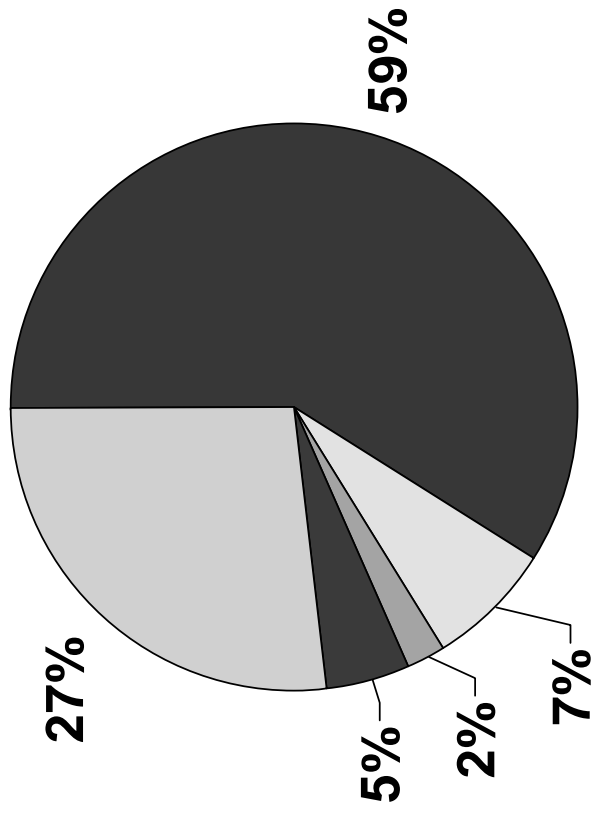
Source: MuSTT model; figures for 2001

NHTV CSTT

# From trips to impacts: per transport mode

# EU Tourism trips

## EU25 citizens departures (number of trips)

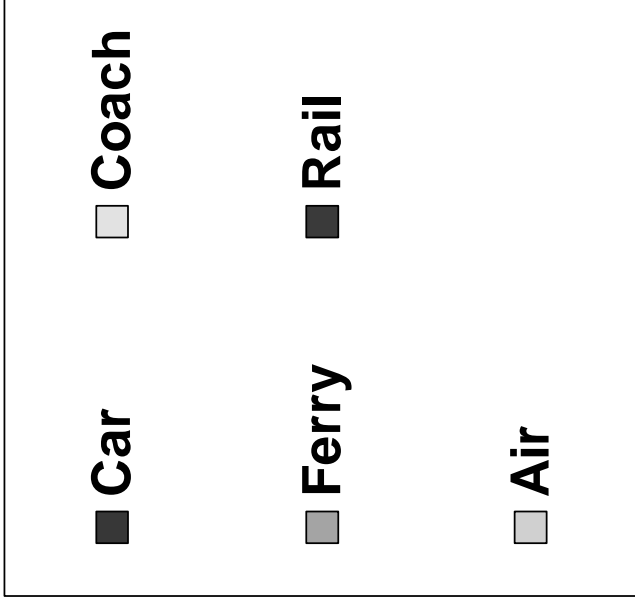
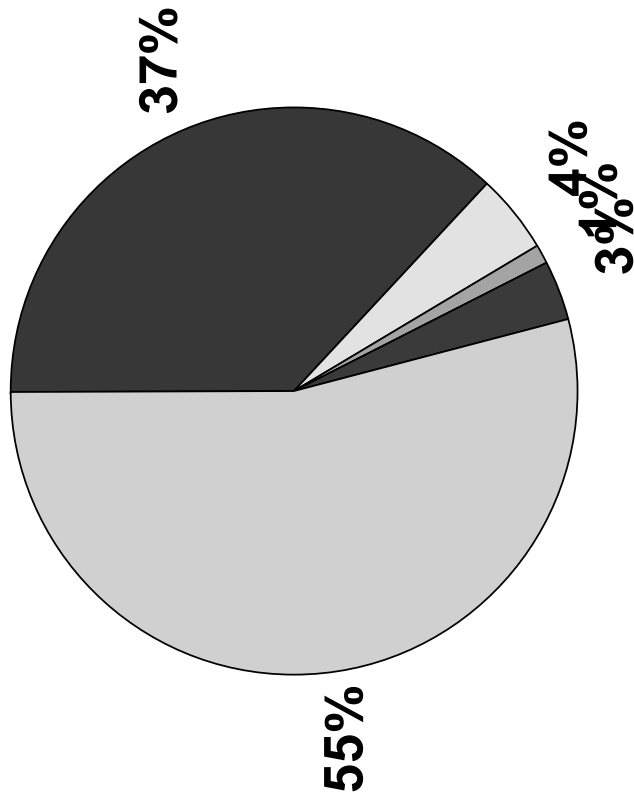


*Total: 932 million*

Source: MuSTT model; figures for 2001

# EU Tourism transport

## EU25 citizens departures (number of pkm)

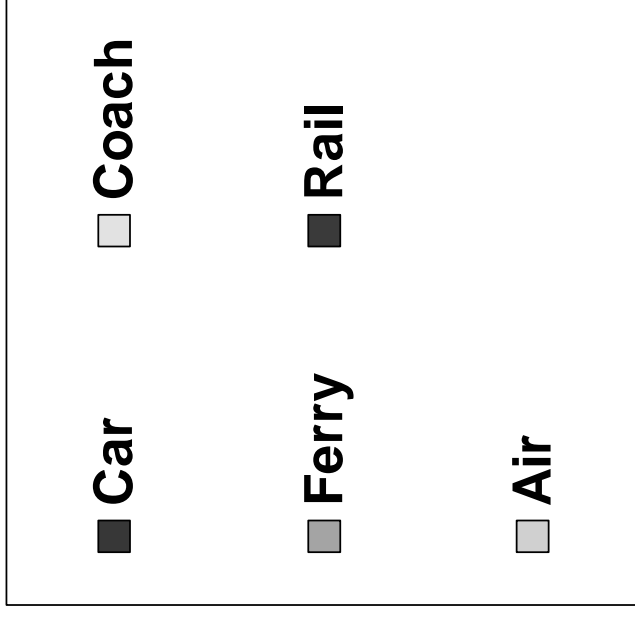
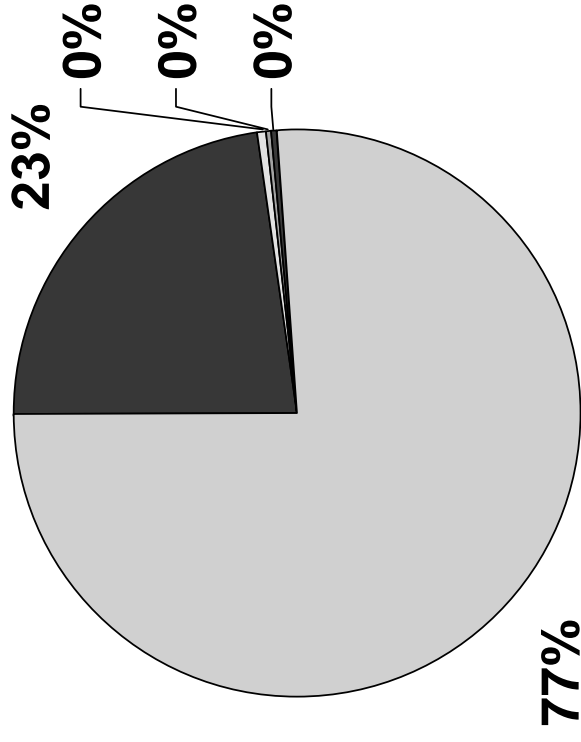


*Total: 1739 billion pkm*

Source: MuSTT model; figures for 2001

# EU Tourism CO<sub>2</sub>-e emissions

## EU25 citizens departures (CO<sub>2</sub>-e emissions)



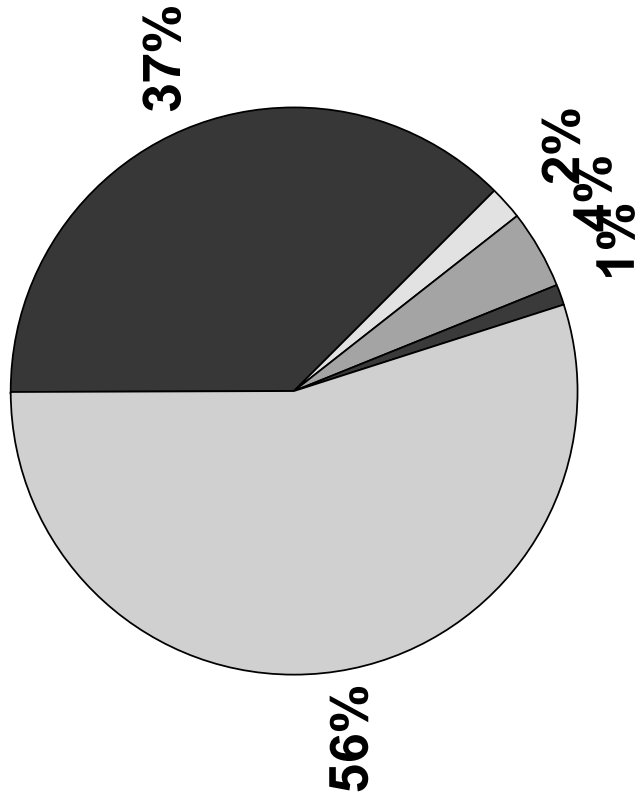
*Total: 398 million ton*

Source: MuSTT model; figures for 2001

NHTV CSTT

# EU Tourism transport NOx emissions

## EU25 citizens departures (NOx emissions)

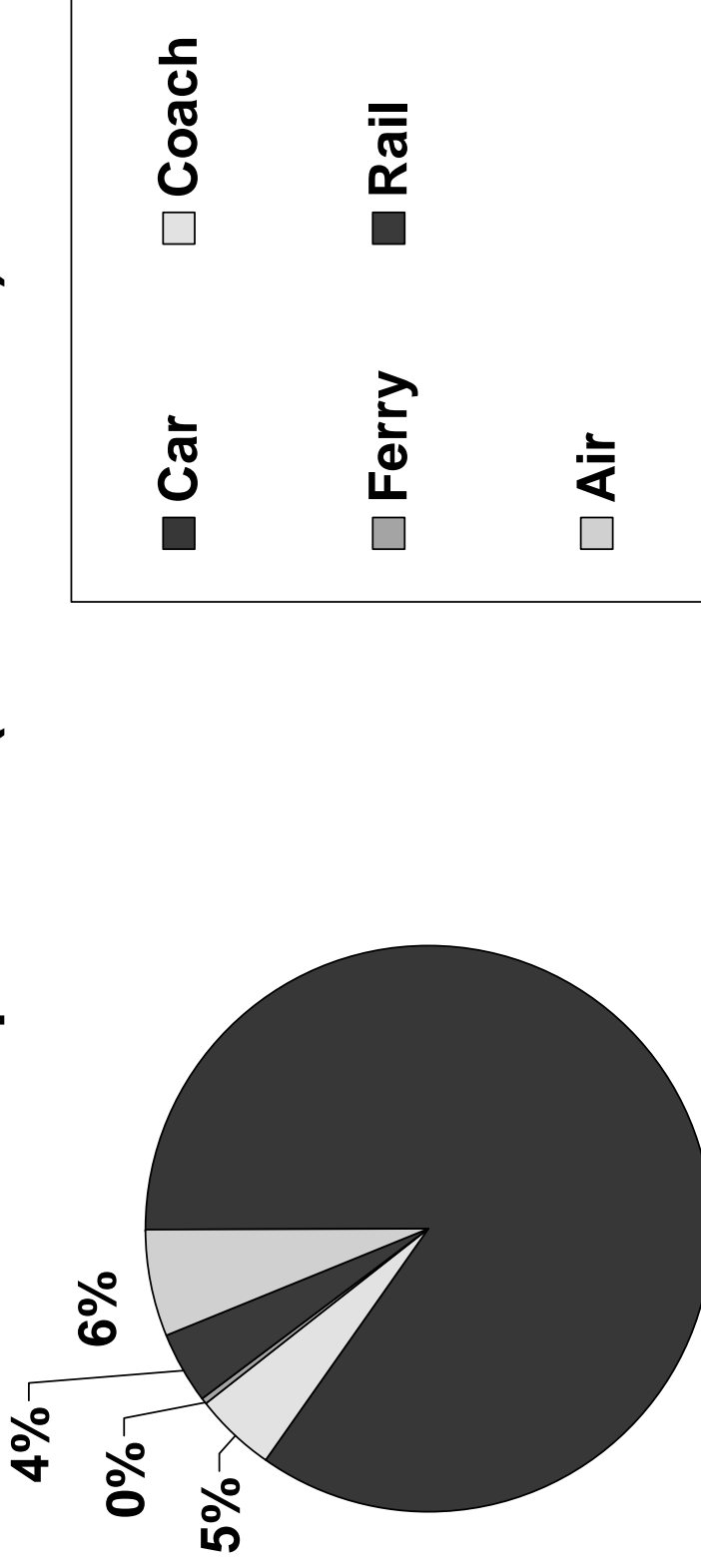


*Total: 858 million kg*

Source: MuSTT model; figures for 2001

# EU Tourism transport PM emissions

## EU25 citizens departures (PM emissions)

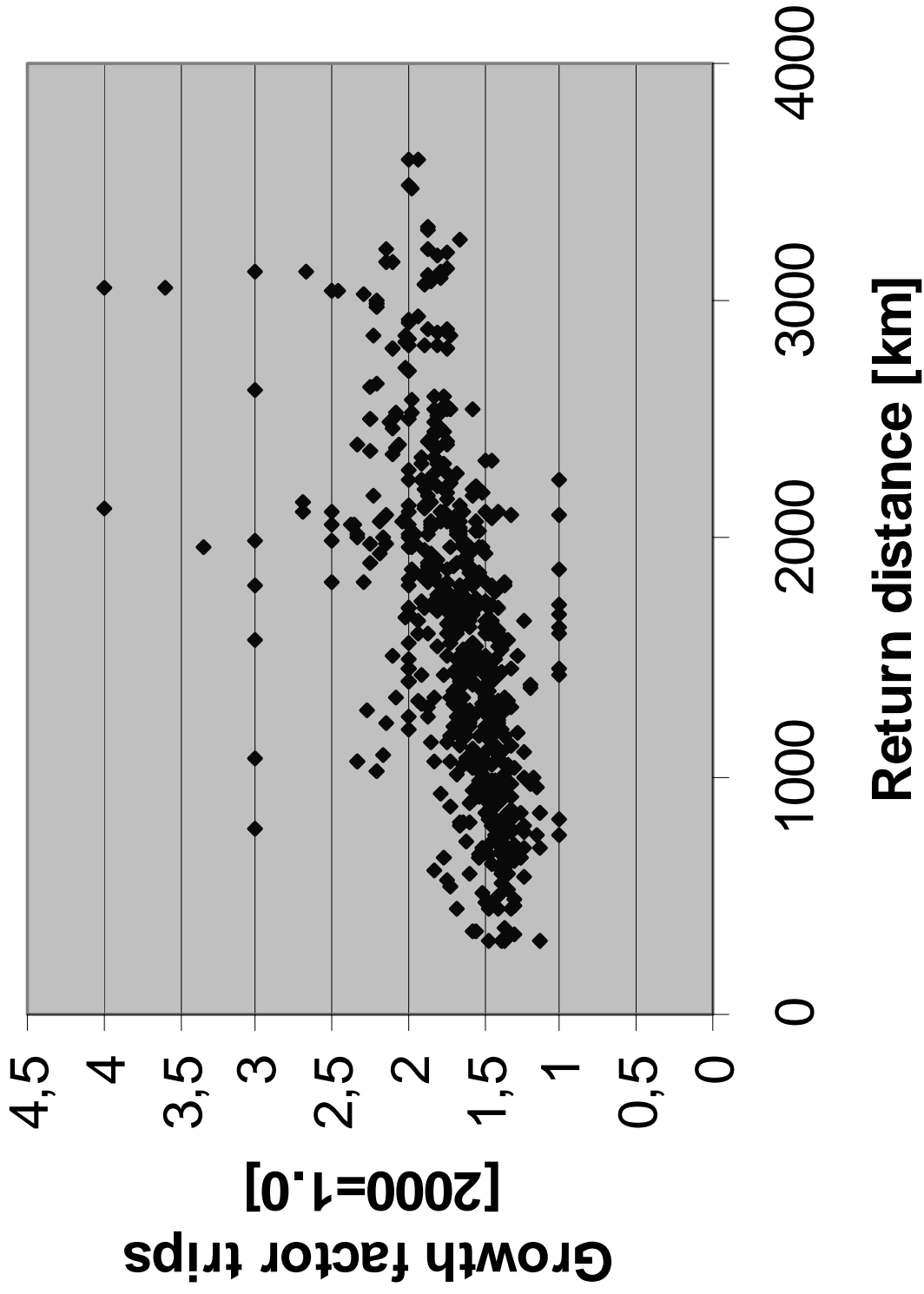


*Total: 16.7 million kg*

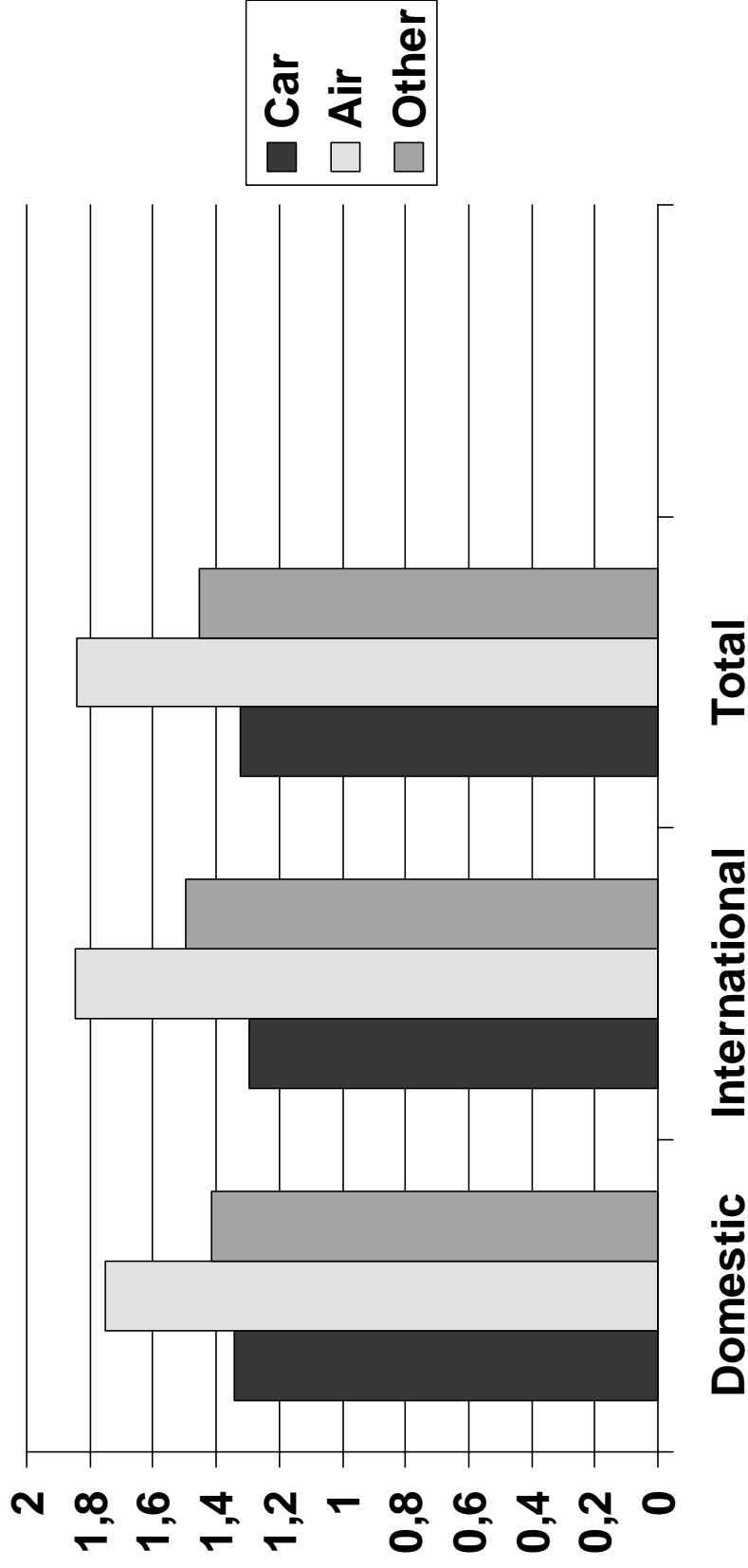
Source: MuSTT model; figures for 2001

NHTV CSTT

# Longer distances in 2020

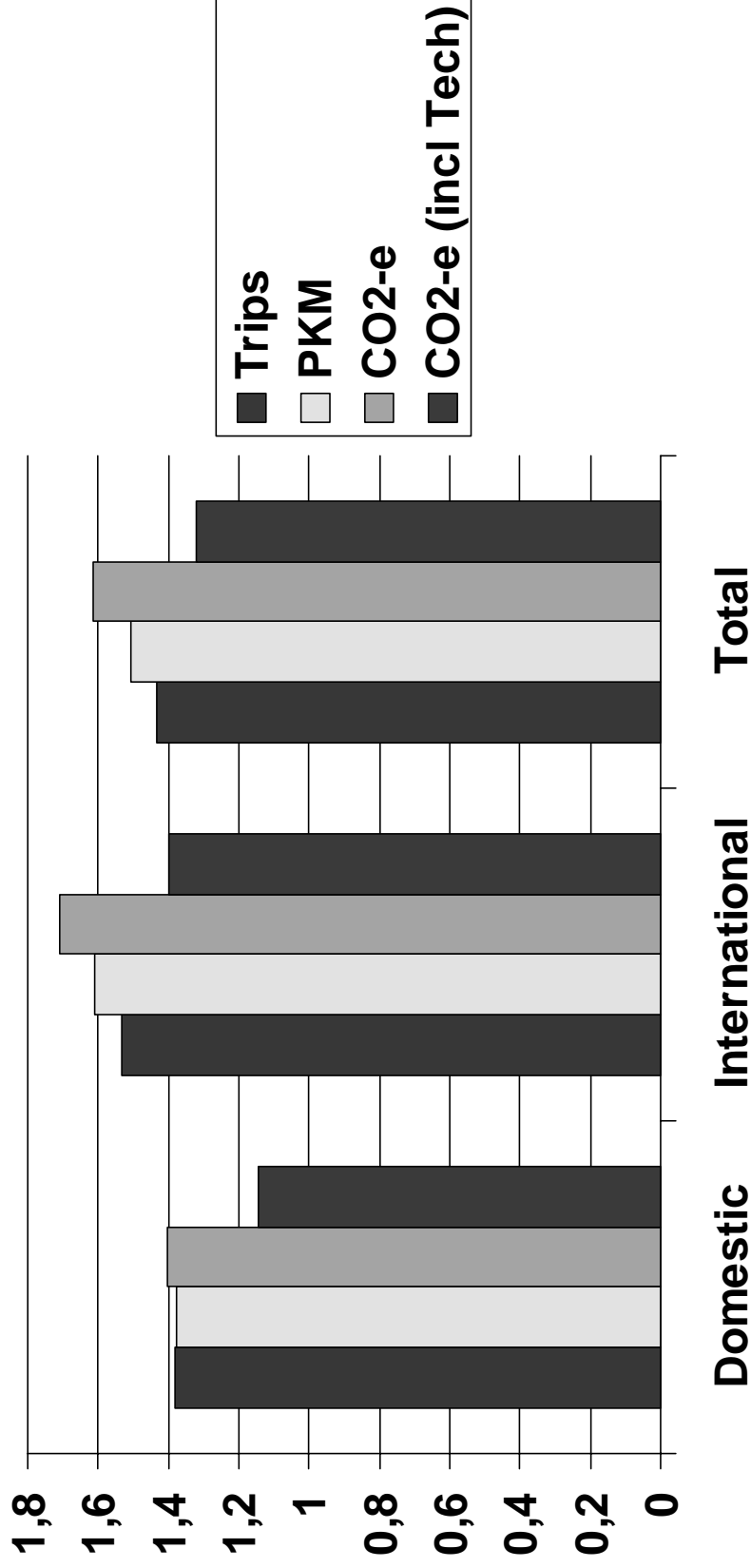


# Growth of pkm Intra EU-plus tourism (2000=1.0)



Source: MuSTT model.

# Growth of trips, pkm and CO2-e for Intra EU-plus tourism (2000=1.0)



Source: MuSTT model.

# Some remarks on tourism trends and mechanisms

- Tourism sector world-wide depends economically on individual leisure time budget and spending per night; not on OD-transport distance.
- Impacts of war, terrorism and infectious diseases are generally temporary (Martin Mowford).
- Increased availability of cheap high speed (air) transport is main driver behind tourism transport growth.
- Current tourism trends - more frequent, more by air and further away - cause stronger growth of environmental impacts, even stronger than the economic growth of the sector.

# Emerging trends due to development of low cost carriers

- >30% of all air European transport in 2010 by LCC's
- LCC's competing in two ways: directly taking away passengers from coach and (high speed) rail and taking passengers over much larger distances for shorter and more frequent breaks (even one-day returns). This means 10-20 times the environmental impact per trip day.
- Second homes are purchased at longer distances ('low cost carrier homes') near LCC destinations.
- Direct and indirect impacts on employment/economy both positive and negative.

# Conclusions (1): tourism and transport

- Domestic tourism has largest share (59%) of in number of trips by EU-25 tourists; intercontinental only 6%.
- The main tourism flows are directed north-south within Europe, main destinations being France, Spain and Italy.
- Domestic tourism is car oriented, while international tourism is air oriented; rail, coach and ferry have small shares.
- Tourism share of all passenger transport is about 17% of total, except for air with >80% and ferry with 60%.

# Conclusions (2): environmental impacts

- Domestic tourism is relatively sustainable; ICA is unsustainable; intra EU25 comes in between.
- Tourism energy consumption and impact on climate change is dominated by air transport.
- Air quality is dominated by (diesel!) car transport.
- Tourism transport safety cost is dominated by car use.
- Tourism noise nuisance is dominated by car and air transport.